

### REMARKS

This Preliminary Amendment accompanies a request for continued examination (RCE). In response to the final Office Action dated July 2, 2007, applicant submits the following amendments and remarks.

Claims 1, 3-17 and 19-39 are pending. Claims 34-39 are new. Claims 1, 17 and 33 are currently amended. Reconsideration and allowance of the above-referenced application are respectfully requested in light of the following remarks.

### **Drawings**

The Examiner has objected to the drawings under 37 C.F.R. 1.83(a) as allegedly not showing every feature of the claimed invention, arguing that the limitation "two or more non-overlapping embedded images" is not shown. Applicants direct the Examiner to Fig. 1, which shows one or more embedded objects 120 in input image 110. As clearly shown in the figure, objects 120 do not overlap. Since Fig. 1 clearly shows this limitation, Applicants request Examiner to withdraw this rejection.

### **Specification**

The Examiner objects to the Amendment filed April 17, 2007 under 35 U.S.C. 132(a) as allegedly introducing new matter, arguing claims 1, 17, and 33 recite the limitation "two or more non-overlapping embedded images" with no support. In addition to the support provided by Fig. 1 (see above), the specification also supports this limitation. For example, the specification teaches "[i]n one implementation, the systems assumes there is a small amount of space between objects ...." 4:13:15. Objects separated by a small amount of space are non-overlapping. Thus, this limitation is supported and no new matter was added in the previously filed amendment. Accordingly, the Applicants request the Examiner to enter this amendment.

### **Section 112 Rejections**

Claims 1, 3-17 and 9-33 are rejected for allegedly failing to comply with the enablement requirement under 35 U.S.C. §112, first paragraph. Please see the arguments regarding Drawings and Specification, above.

### **Section 102/103 Rejections**

In the final Office action of July 2, 2007, the Examiner rejected the claims as follows:

- (1) Claims 1, 3-7, and 10 are rejected for allegedly being anticipated by Takahashi (US 6,665,439).
- (2) Claims 8, 11-13 are rejected for allegedly being unpatentable over Takahashi in view of Huang et al (US Patent No. 5,671,290).
- (3) Claims 14 and 16 are rejected for allegedly being unpatentable over Takahashi in view of Huang et al and further in view of Noda et al (Pub No. US2002/0030634).
- (4) Claim 15 is rejected for allegedly being unpatentable over in view of Huang et al and further in view of Curtright et al (Patent No. 5,844,570).
- (5) Claims 9, 17, 19-33 are rejected for allegedly being unpatentable over Takahashi in view of Prakash et al (US Patent No. 6,778,698).

In view of the foregoing amendments and the following remarks, Applicant respectfully requests reconsideration and withdrawal of the claim rejections.

#### Claims 1, 3-16 and 34-35 are patentable over the cited references

Claim 1 has been amended to recite, in part, a computer-implemented method for identifying one or more objects within an image that includes:

identifying a substantially connected component that includes non-edge pixels and a plurality of substantially connected edge pixels being substantially connected to the selected edge pixel, wherein the number of non-edge pixels in the substantially connected component is based on a level of tolerance for non-edge pixels;

This limitation is supported in the present application, for example, at page 8, line 2 to page 9, line 6 and in FIG. 5B. As shown in that example, a substantially connected component 510 in an image 300 includes a set of edge pixels and a portion 410 of the edge pixel map that is surrounded by non-edge pixels. The substantially connected component 510 is computed using a traversal algorithm that has a certain level of tolerance for non-edge pixels. The tolerance level can be set according to a user input or automatically as a function of spacing between objects.

The cited reference is not understood to teach this limitation. In particular, the Applicants direct the Examiner to col. 18, lines 49-61 of the Takahashi patent which discloses that the direction of an edge is determined by applying edge templates to pixel vector data. Upon obtaining the direction of an edge, interpolation then is used to form the edge as a continuous line. Accordingly, an edge identified by this method does not correspond to a “substantially connected component that includes non-edge pixels” as recited by pending claim 1. Instead, the edge is formed as a “continuous line” in which “any breaks in the continuity of the edge” are eliminated (*see* col. 18, lines 50-52, 56-58). Furthermore, even if the edge did include non-edge pixels, which is incorrect, the Takahashi patent fails to disclose or suggest that a “number of non-edge pixels is based on a level of tolerance for non-edge pixels.” Indeed, the Takahashi patent fails to disclose any use of a “tolerance level” for including non-edge pixels in a substantially connected component.

In addition, none of the cited references, alone or in combination, disclose or render obvious the subject matter of pending claim 1.

The Huang et al. patent discloses a face recognition system that includes locating and extracting face regions belonging to known people from a set of model images, and determining the face pose for each of the face regions extracted (*see* Abstract). However, the Huang et al. patent fails to disclose the features of pending claim 1 that are missing from the Takahashi patent.

The Noda et al. reference discloses an image synthesizing apparatus for producing a synthetic image that consists of a background image and at least a main image superimposed on the background image (*see* Abstract). However, the Noda et al. reference fails to disclose the features missing from the Takahashi patent.

The Curtright et al. patent discloses a computer-implemented method for generating digital map images of a uniform format that includes: cropping a bit mapped map image corresponding to a desired geographic area; moving the boundaries of the selected map image into a tessellated shape and then re-sizing the map image to contain a predetermined pixel area (*see* Abstract). There is no disclosure in the Curtright et al. patent of the features missing from the Takahashi patent.

The Prakash et al. patent discloses a technique to segment an image that includes a multi-scale segmentation process operating on an image and a set of edge chains. Although the Prakash et al. patent discloses the use of an edge chain, it fails to disclose that the edge chain is a “substantially connected component that includes non-edge pixels” in which the number of non-edge pixels is based on a level of tolerance. Instead, the Prakash et al. patent discloses that the edge chain are generated from linked edge pixels (*see* col. 9, line 57 – col. 10, line 8).

At least for the foregoing reasons, claim 1 should be allowed.

Claims 3-16 and 34-35 depend from claim 1 and should be allowed for at least the same reasons as claim 1.

Claims 17, 19-33 and 36-39 are patentable over the cited references

Claim 17 recites a computer program product, tangibly stored on a computer-readable medium, for identifying one or more objects within an image, that includes instructions for identifying a “substantially connected component that includes non-edge pixels” in which the number of non-edge pixels in the substantially connected component is based on a “level of tolerance for non-edge pixels.”

None of the cited references, alone or in combination, disclose or render obvious the subject matter of independent claim 17. As set forth in reference to claim 1, the cited references fail to disclose or suggest a “substantially connected component that includes non-edge pixels” in which the number of non-edge pixels in the substantially connected component is based on a “level of tolerance for non-edge pixels.”

Accordingly, claim 17 should be allowed. Claims 19-32 and 36-37 depend from claim 17 and should be allowed for at least the same reasons as claim 17.

Claim 33 recites a computer program product, tangibly stored on a computer-readable medium, for identifying multiple objects within a scanned image, that includes instructions for identifying a “substantially connected component” in which the substantially connected component is a set of edge pixels that are substantially connected by traversing adjacent edge pixels and “adjacent non-edge pixels.” The number of non-edge pixels in the substantially connected component is “based on a level of tolerance for non-edge pixels.”

None of the cited references, alone or in combination, disclose or render obvious the subject matter of independent claim 33. There is no disclosure or suggestion in the cited references of a “substantially connected component” in which the number of non-edge pixels in the substantially connected component is based on a “level of tolerance for non-edge pixels.”

At least for the foregoing reason, claim 33 should be allowed.

Claims 38-39 depend from claim 33 and should be allowed for at least the same reason as claim 33.


**Conclusion**

By responding in the foregoing remarks only to particular positions taken by the examiner, the Applicant does not acquiesce with other positions that have not been explicitly addressed. In addition, the Applicant's arguments for the patentability of a claim should not be understood as implying that no other reasons for the patentability of that claim exist.

The Applicant respectfully requests that all pending claims be allowed. Please apply any charges or credits to deposit account 06-1050.

Respectfully submitted,

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